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ABSTRACT

The mathematics learning center at Tacoma Community College (Washington) has three programs: an independent-tutorial study system, a student tutorial system, and a basic arithmetic skills laboratory. Thirty independent-tutorial study mathematics courses, ranging from arithmetic to calculus, are available within the structure and control of the mathematics department. During the quarter, the student proceeds at his or her own rate of study using a commercially available active-involvement text. A student either completes the course by the end of the quarter or earns an incomplete grade which must be made up during the next quarter. The mathematics lab personnel consist of a faculty director assigned for three hours daily, instructors who diagnose exams and prescribe remedies for weaknesses, teaching assistants from universities, and clerks who administer and correct exams and keep all student records. The student tutorial service coordinates tutors and tutees without charge. The basic skills lab provides service to adults whose skill level in reading and arithmetic is below fifth grade. Results over seven years are seen in a reduced lecture class dropout rate, and in the doubling of the math student population without any increase in personnel. Advantages and disadvantages of the program are discussed and an appendix, containing a list of texts used, a floor plan of the lab, instructions for the independent learning modules, and sample student reminder cards, is included. (MB)

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MATHEMATICS: K-14

A LEARNING CENTER APPROACH AT

TACOMA COMMUNITY COLLEGE

by Richard Spangler

JC 780 594

Presented at the annual meeting of the American Mathematical Association of Two-Year Colleges, Houston, Texas, October 10-14, 1978.

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TACOMA COMMUNITY COLLEGE

By Richard C. Spangler

INTRODUCTION

Behind every educational innovation there is a human need. And in the community college system, the concept of the mathematics learning center has evolved to keep pace with individual needs.

The other day a divorcee in her 40's came to me with a story of her teen-aged pregnant daughter. This woman was trying simultaneously to raise two other teen-agers, work, and go to school to get a better job. Because of a court case involving her daughter, she had been too distraught to study mathematics and wondered if we would agree to a slower pace.

Last Winter Quarter, a Black, 76-year old gentleman who could barely read wanted to learn arithmetic. We discovered that he needed to start at the very beginning--counting and writing numerals.

These two people entered our community college because of the community college open-door philosophy. Community college students today range from junior high age to the senior citizen, from full-time workers to unemployed, from non-readers to college level readers, from slow learners to fast ones, and those with all types of personal problems. These people are reaching out to the American community colleges for more education and job training. To meet these needs requires Herculean effort and innovative teaching methods.

The mathematics learning center such as the one in operation at Tacoma Community College is an effective method of training and reaching such a diversity of students. The math learning center was conceived by the members of the mathematics department at Tacoma Community College because traditional

methods of instruction did not meet the needs of students and potential students in our community. The learning center, as it now operates, has indeed increased both learning and cost effectiveness.

Our system has three programs: the independent-tutorial study system, the student tutorial system, and the basic arithmetic skills laboratory. All are within the structure and control of the mathematics department. (Figure 1, the floor plan of the TCC Mathematics Learning Center, will aid the reader in the following descriptions of the three systems)

THE INDEPENDENT-TUTORIAL STUDY SYSTEM

Enrollment and Orientation

With the help of an advisor or counselor, following regular registration procedures, a student enrolls in any one of more of 30 independent study mathematics courses, ranging from arithmetic through calculus. The student has the option of enrolling either in an individualized course of instruction in the mathematics learning center, or in a traditional classroom lecture course. The variety of lecture classes, however, is more limited. The first day of each quarter, students who elect the individualized learning center attend an orientation session. They receive a special instruction packet for their courses and fill out a lab enrollment card. The instruction packet includes a welcome letter, lab and course requirements, grading and testing policies, and suggested dates for testing. Since the lab allows for open enrollment, new students can begin a course at any time.

The Process

During the quarter, the student proceeds at his or her own rate, unit by unit, using a specially assigned, commercially available active-involvement text or worktext and supplements. The suggested testing dates are used only

as a guide to help the student finish in one quarter if he or she desires to do so. The student may attend the center, where a qualified instructor is always available, for special tutoring, testing, or study. The center is open six hours during the day, 3 1/2 hours on four evenings a week, and 4 1/2 hours on Saturday mornings. As many as four instructors are available at one time during peak hours.

Testing

One student clerk per hour disseminates and corrects examinations, files, and logs in student time onto an enrollment-grade card. Each time a student attends the lab he records the time on a time sheet located on a table by the entrance. When the student finishes his test, the clerk corrects it and gives the results to the student. If he does not obtain at least 80%, the student is referred to an instructor. The instructor uses the exam as a tool to discover major weaknesses and to assign remedies such as tape-cassettes, or specially designed written recycling material. The student repeats the process at his or her own pace until the course is completed. Students are encouraged to use any of the available study supplements even before the exams are taken.

Reminder Cards

To encourage more interest in the lab as well as to attempt to overcome procrastination, reminder cards and letters are sent periodically to students who lag in progress and attendance.

Incomplete Grades

A student either completes his course by the end of the quarter or earns an incomplete grade. To earn an incomplete, the student must attend the lab at least 30 hours during the quarter and complete at least 2/3 of his examinations. We reduce these requirements for late entries and for those

who have special personal problems. We use post-cards and letters to encourage the student to complete the course. The student must finish the course during the next quarter unless a special agreement is made. After this time, the student must enroll again.

The Math Lab Personnel

The Math Lab Director is a math faculty member with released time to perform the various duties pertaining to managing the lab. He is assigned 3 hours daily lab time to work with the students. His office is located in the math lab.

Instructors are members of the math faculty assigned to work with students in the lab no more than three hours daily. Their duties include diagnosing exams and prescribing varying remedies to overcome the student's mathematical weaknesses.

Part-time Instructors are qualified math instructors outside of the regular staff who are hired to perform the same duties as the instructors above either during the day, evening, or on Saturday.

Teaching Assistants are students who are majors in math from the surrounding four year universities. These people are hired on a part-time basis in the evenings and Saturdays to tutor students in the lab. They may serve as clerks when one is not available.

Clerks are work-study students who administer and correct exams, and keep all records pertaining to the students.

STUDENT TUTORIAL SYSTEM

In conjunction with the mathematics learning center at TCC, students operate and finance a free mathematics tutorial service under the direction of the mathematics department. A tutorial director, from a list of mathematics department-approved tutors, coordinates, assigns tutors and tutees, and keeps all records. The director is also responsible for tutor training. The tutee who needs help beyond what is given in the independent study system can ask for help by applying to the tutorial director, or be recommended for help by an instructor. When the tutor is not busy with a tutee, he is allowed to help individual students in the study lab.

THE BASIC SKILLS STUDY LAB

The basic skills study laboratory (housed in a separate room in the math learning center) provides a service to adults whose skill level in reading and arithmetic is below fifth grade. After initial screening, students are placed in groups of 1 or 2 with one student-teacher group coordinator. These coordinators are usually pre-education majors enrolled in a math-tutorial practicum for this purpose. Each student has an individualized learning-activity program specifically tailored to his needs. The program includes manipulation (Cuisenair rods, sticks, blocks, etc.), games, puzzles, audio-cassette tapes, and drill work. Our 76-year old gentleman began by counting sticks, is now in the process of learning how to divide, and is most satisfied. The program culminates in a simple practical consumer education course.*

*For a more detailed description and system activity index, write to:

Research Coordinating Unit
Commission for Vocational Education
State of Washington
Olympia, WA 98504

The results over the past 7 years at TCC have been phenomenal. Because of the nature of our students, lecture classes have a 50% drop-out rate, some as high as 60%. The lab has helped to reduce this to about 30% or 40%, because of open enrollment and better placement. A student who previously might have dropped out of a math class mid-quarter due to the pace of instruction may immediately enroll in the math center and continue the course at his own rate.

Because of the program's flexibility, our math student population has doubled without any increase in personnel. Our full-time equivalent students per instructor is more than double that of the school's average, yet the math instructor's workload has not increased. To serve the same number of students (1,700 per quarter) under the lecture system would require approximately 100,000 dollars more per year and ten additional instructors.

The flexibility of service to students has been greatly enhanced. Besides the basic skills lab, we have vocational mathematics courses designed for twenty different occupations, which would be impossible to offer under a traditional system. With the cooperation of the local technical institutes and trade unions, vocational-technical students enroll in our specially designed voc-tech courses to learn the mathematics of a specific occupation. These courses of 1 to 3 credits each are individualized by occupation so that not all students cover the same material. Our next project will be to develop a system of instruction so that blind students may take math through the learning center.

Despite our success, certain disadvantages are evident:

1. A student who chooses the independent-study approach rather than the lecture approach sometimes finds he is unsuited for it because of poor

self-discipline and study habits. By the time this is discovered, it is usually too late to transfer to a lecture section.

2. A student who is successful in this type of individualized study may find it difficult to adjust to classroom mathematics instruction when no other form is available.

3. Some students tend to procrastinate, since completion of a course depends on a student's initiative to study the material and take tests. Again, self-discipline is a key factor.

4. Only courses based on manipulative skills can be offered through the mathematics learning center. Courses such as geometry, mathematical thinking, and some parts of college algebra and calculus are very difficult to program, since group interaction is needed.

5. The instructor has more control over attendance in the lecture system.

6. Many difficulties and misunderstandings arise because students lack the ability to read with comprehension.

7. Unless the system is extremely well-executed, the record keeping and planning can be overwhelming.

8. For the shy person, individualized instruction can be a lonely way to learn.

9. The system can be frustrating to an instructor who needs to feel in command of a situation.

10. The demand on the instructor's patience, time, and teaching prowess is extraordinary during the time spent in the center.

11. The instructor might find it difficult to shift roles from a dispenser of knowledge to a manager of a learning environment.

Both program and learning flexibility offered to our students through the math learning center far outweigh the hypothetical shortcomings. A mathematics student can:

1. Proceed at his own rate of speed.
2. Take as long as needed to understand the individual contents of the course.
3. Take frequent and multiple tests when ready.
4. Have unlimited testing time.
5. Have instant feed-back on test results.
6. Have a high probability of success.
7. Have tutorial help when needed.
8. Emphasize learning rather than grades.
9. Take courses at any time, day, night, or Saturday at own convenience.
10. Have a choice of a number of instructors.

Some faculty, too, find the system advantageous. Because of the built-in flexibility, the system is able to serve many more needs, types, and levels of students than can be served under traditional classroom situations. In addition, instructors are more free to lend sympathetic help, set goals, tutor, counsel, and be involved in the continuous process of diagnosing and prescribing for each learner.

Most students like the advantage of proceeding at their own rate of speed. A program evaluation questionnaire indicated that 92% of 291 students were satisfied with their progress, and 90% indicated that they would continue using independent study for other mathematics courses.

Thus, in summary, when asked what they liked best about the system, over half the students indicated that they appreciated the freedom, flexibility, and ability to proceed at their own rate of learning. Others liked the immediate available help, the laboratory atmosphere, and the instructor's attitude of "What can we do to help you be successful?"

The students were also asked what they liked least about the system. Outside the usual comments about tricky test questions, some students missed the competition with other students, and some thought it harder to learn using this method. No comments were made about independent study being boring under this particular system.

Certain aspects are pertinent to the success of any individualized learning system.

Primarily, it is imperative that the lecture system remain an optional teaching mode for as many courses as possible. Not all students can or should learn under an independent-study mode of instruction. It is very difficult to determine the correct mode for the student before he registers.

We, therefore, have open enrollment and determine the status of the student after the quarter opens. Advising and counseling is continuous throughout the quarter. The student can be counseled into the math lab from a lecture class anytime during the quarter. He must wait until the start of the next quarter, however, if he desires to continue his math in a lecture-class if the independent mode was found to be incompatable.

In addition, the Center should have:

1. A full-time or part-time director on a continuous basis
2. A sympathetic and cooperative math staff and administration.
3. Easily understood active-involvement learning matherial specifically designed for independent study.
4. Carefully planned and executed testing procedures.
5. Follow-up material for weaker students.
6. A follow-up plan for procrastinators.
7. Reasonable facilities.

APPENDIX

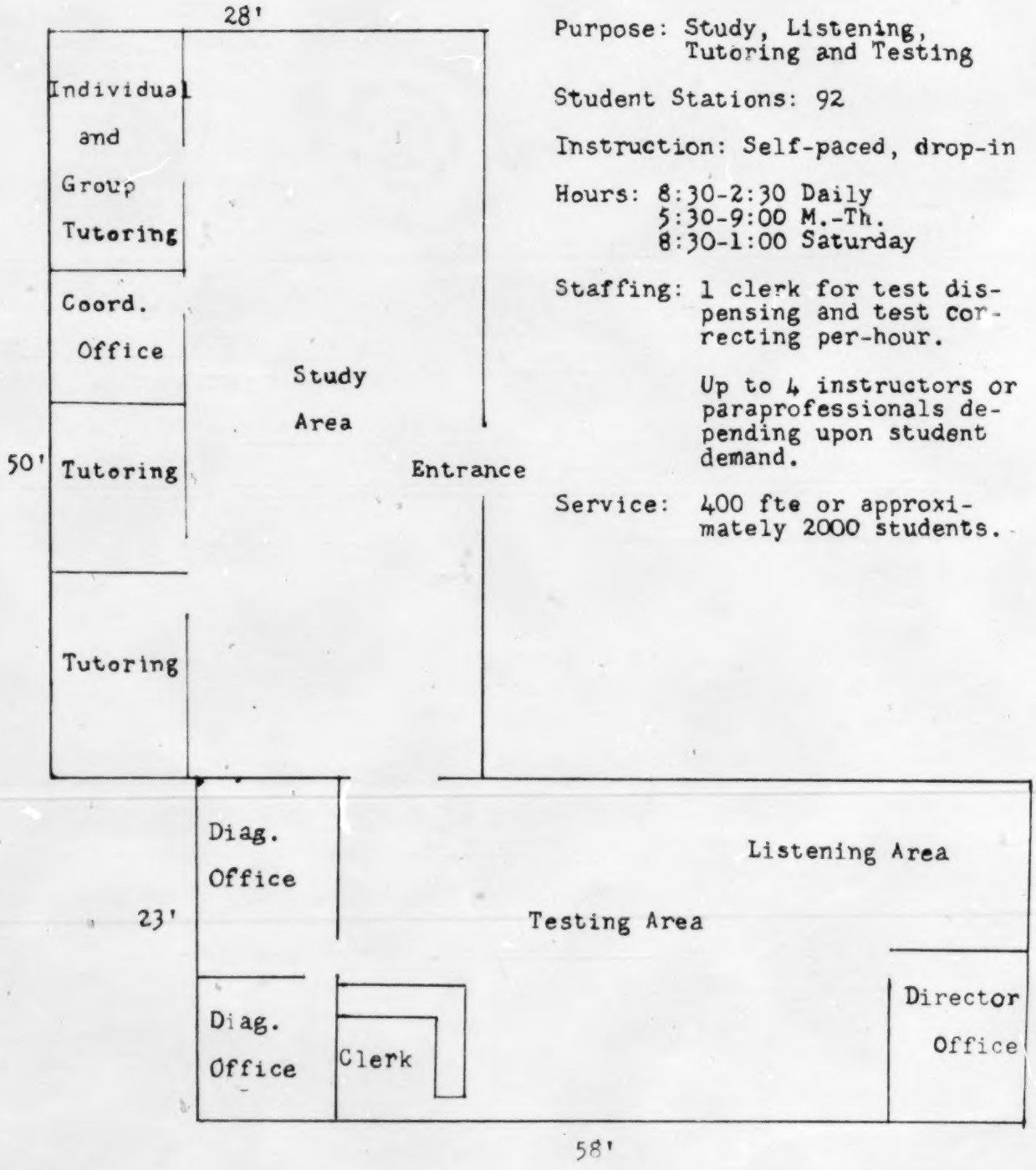
CURRENT ACTIVE-INVOLVEMENT TEXTS

TACOMA COMMUNITY COLLEGE MATH LAB
Richard Spangler

COURSE	TEXT
Whole Numbers	Spangler, Richard, Whole Numbers, TCC Bookstore
Fractions	Spangler, Richard, Fractions, TCC Bookstore
Decimals	Spangler, Richard, Decimals, TCC Bookstore
Percentage	Spangler, Richard, Percentage, TCC Bookstore
Measurement	Spangler, Richard, Measurement, TCC Bookstore
Metric System	Miller, David, Metric System, Allyn & Bacon
Review Arithmetic	Spangler, Richard, Essential Arithmetic, TCC Bookstore
Math Shortcuts	Locke, Flora, Math Shortcuts, Wiley
Introduction to Algebra and Elementary Algebra	Keedy-Bittinger, Introductory Algebra: A Modern Approach, Second Edition, Addison-Wesley Spangler, Richard, Student's Solution Booklet, Addison-Wesley Keedy-Bittinger, Tape Cassettes for Introductory Algebra: A Modern Approach, Addison-Wesley Spangler, Richard, Instructional Supplement to Even Numbered Exercises
Introduction to Story Problems	Denmark, Ewell, Basic Motion Problems Denmark, Ewell, Basic Mixture Problems Denmark, Ewell, Basic Wrok Problems, Houghton-Mifflin
Plane Geometry	Ashley, Modern Geometry, Glencoe
Pocket Calculator	Mullish, Henry, How to Get the Most Out of Your Pocket Calculator, Collier Books Judd, Wallace, Games, Tricks and Puzzles, Creative Publications.
Voc-Tech Math	Boyce, John, Mathematics for Technical and Vocational Students, Wiley
Trigonometry of Rt. Triangles	Sagan, Leon, Trigonometry, Dickenson

COURSE	TEXT
Math for Health Occupations	Sackheim, George, Programmed Math for Nurses, MacMillan
Intermediate Algebra	Keedy-Bittinger, Intermediate Algebra: A Modern Approach, Addison-Wesley Spangler, Richard, Student's Solution Booklet, Addison-Wesley Keedy-Bittinger, Tape Cassettes for Intermediate Algebra, Addison-Wesley Spangler, Richard, Instructional Supplement to Even Numbered Exercises
College Algebra	Keedy-Bittinger, College Algebra: A Functions Approach, Addison-Wesley Spangler, Richard, Student's Solution Booklet, TCC Bookstore
Plane Trigonometry	Howes, Vernon, Pre-Calculus Math, Book 3, Wiley
Analytic Geometry	Smith, Karl, Analytic Geometry, Brooks/Cole
Vector Geometry	Carman, Robert, A Programmed Introduction to Vectors, Wiley
Logic & Set Theory	Cheifetz, Philip, Logic & Set Theory, Math Alternatives
Business Mathematics	Locke, Flora, Business Mathematics, Wiley
Calculus	Merriell, David, Calculus: A Programmed Text, Vol. I, W. A. Benjamin
Introduction to Statistics	DeSanto, Carmine, Statistics Through Problem Solving, Math Alternatives
Introduction to Probability	Earl, Boyd, Introduction to Probability, McGraw

FLOOR PLAN OF THE TACOMA COMMUNITY COLLEGE MATH LAB



Purpose: Study, Listening, Tutoring and Testing

Student Stations: 92

Instruction: Self-paced, drop-in

Hours: 8:30-2:30 Daily
5:30-9:00 M.-Th.
8:30-1:00 Saturday

Staffing: 1 clerk for test dispensing and test correcting per-hour.

Up to 4 instructors or paraprofessionals depending upon student demand.

Service: 400 fte or approximately 2000 students.

INSTRUCTIONS FOR INDEPENDENT-TUTORIAL LEARNING

REVIEW ARITHMETIC

MATH 86

Texts: 1. Arithmetic, Spangler
2. Student's Answer Booklet, Spangler

INTRODUCTION

Your text and solutions booklet are designed to be your main teaching tool. As you read and participate, you will probably learn more mathematics using this method than any other you have encountered in the past. In case you need help, a fully qualified math instructor and other teaching aids are always available during regular math lab hours.

NOW YOU ARE READY TO BEGIN

1. Turn to the course outline in this pamphlet. On this page you will find the steps you must go through in order to complete Math 86.

2. Be sure you check the outline for the exact chapter to be studied for each test.

3. Read and participate through the program for the chapter. Do all the Practice Exercises. The answers to these are on the next hidden page.

4. Do as many odd numbered A exercises after reading each section as needed to feel secure in the particular skill being learned. You do not have to do all the odd numbered exercises. Use your own judgment as to how many you need to do. These exercises are found at the end of each section. The answers to all exercises are in the answer booklet which can be purchased from the book store. Do not do the even numbered or B exercises. We will use these exercises for any further drill work that you may need.

5. It is very important that you do the exercises. Your exams are based on these exercises. You should not have any trouble with the exams if these exercises are done.

CALCULATORS ARE NOT TO BE USED ON ANY EXAMINATION!

NEED MORE HELP THAN THE TEXT PROVIDES?

1. Be sure to use the Student's Solution Booklet if more instruction is needed.

2. Instructional tape-cassettes for each section in the text are available. You may request their use either in the math lab or in the listening lab in Building #7.

3. An instructional guide to the even-numbered exercises is also available. Ask a math lab instructor for this aid if needed.

4. If you need more help, sign-up for a personal tutor in the tutoring office in the math lab.

WHAT ABOUT TESTING?

1. Be sure to follow the test chedule found in this pamphlet.

2. Before taking your test, take the chapter test found at the end of the chapter to see if you are ready. Follow the directions that are located at the beginning of the exam. The test problems are based on problems found in the trial test and your exercises.

3. When you are ready, ask the lab technician for your chapter test by giving the number of your course and test. The teacher's aid will correct your test. Do not make a mark of any kind on these test. Call the instructor if there is any question.

4. In order to go on to the next unit you will have to receive a grade of 80% or better. If this is the case and after you thoroughly understand your mistakes, hand the questions and your answer sheet to the secretary.

5. It is your responsibility to make sure that your grade is recorded on the grade card in the file. An unrecorded grade means that the student will have to re-take the test.

6. If you did not pass the above requirement, study your mistakes. Make the instructor aware of your weaknesses so that he may advise further work before you take another test over the same unit you must wait a day before retaking any test.

GENERAL INFORMATION

1. In order to receive an incomplete grade at the end of the quarter, you must finish at least 7 of the 11 exams and attend the lab at least 30 hours.

2. Suppose before the end of the quarter you know that you will not be able to earn an incomplete but will receive a withdrawal grade:

   To save some of the five credits you will lose, you may transfer to and get credits for the following courses:

Math 80	If you have passed tests 1, 2, and 3 from Math 86
Math 81	If you have passes tests 4 and 5
Math 82	If you have passes tests 6,7 and 8

   You must make this change before the end of the quarter. See an instructor.

3. Remember, an instructor or tutor is available for individual conferences during regular lab hours.

CALCULATORS ARE NOT TO BE USED ON ANY EXAMINATION!

Instructions and Test Schedule

CALCULATORS ARE NOT TO BE USED ON ANY EXAMINATION

If you plan to finish this quarter, you need to study three sections every two days, and you should follow the schedule given below.

If you are in a hurry, keep ahead of the schedule.

If you are not in a hurry to finish, don't be concerned with the schedule, but by all means make your own and keep to it!

Note: You may take your tests on any day of the week.
Note: If you get behind, don't drop the course! Try for the incomplete.

Check When Done		Directions	Complete on or Before	Grade
_____ 1.		Study Chapter 1	First Week	
_____ 2.	Test 1	Take Test 1 covering Chapter 1.	First Week	_____
_____ 3.		Study Chapter 2	Second Week	
_____ 4.	Test 2	Take Test 2 covering Chapter 2	Second Week	_____
_____ 5.		Study Chapter 3	Third Week	
_____ 6.	Test 3	Take Test 3 covering Chapter 3	Third Week	_____
_____ 7.		Study Chapter 4	Fourth Week	
_____ 8.	Test 4	Take Test 4 covering Chapter 4	Fourth Week	_____
_____ 9.		Study Chapter 5	Fifth Week	
_____ 10.	Test 5	Take Test 5 covering Chapter 5	Fifth Week	_____
_____ 11.		Study Chapter 6	Sixth Week	
_____ 12.	Test 6	Take Test 6 covering Chapter 6	Sixth Week	_____
_____ 13.		Study Chapter 7	Seventh Week	
_____ 14.	Test 7	Take Test 7 covering Chapter 7.	Seventh Week	_____

_____ 15.		Study Chapter 8	Eighth Week	
_____ 16.	Test 8	Take Test 8 covering Chapter 8	Eighth Week	_____
_____ 17.		Study Chapter 9	Ninth Week	
_____ 18.	Test 9	Take Test 9 covering Chapter 9	Ninth Week	_____
_____ 19.		Study Chapter 10	Tenth Week	
_____ 20.	Test 10	Take Test 10 covering Chapter 10	Tenth Week	_____
_____ 21.		Study Chapter 11	Finals Week	
_____ 22.	Test 11	Take Test 11 covering Chapter 11.	Finals Week	_____

Congratulations!

Go right on to Math 88

NAME Mr. / Mrs. / Miss / Ms. (Print) LAST FIRST INITIAL _____ Course No. _____

Day ____ Night ____ Sat. _____

SOCIAL SECURITY NO. _____ Date Changed _____

LOCAL ADDRESS _____
Street City ZIP Code

LOCAL TELEPHONE _____

ENTRY DATE _____

QUARTER/YEAR _____

AGREEMENT _____

FINISH BY END OF F W S ___
(Circle) Yr.

List all other math lab courses you are taking this quarter.

_____

State course you are finishing from last quarter if any.

_____

	1	2	3	4	5	6	7	8	9	10	11	12	13
A													
B													
C													
D													
Gr													

I W _____
(Circle) Date

Final Grade _____

Date Completed _____

Enrollment Card

HOURS

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22		
23	24	25	26	27	28	29	30				

Card Sent: ☐

MINUTES

(Do not mark in space above)

List your previous math courses:

HIGH SCHOOL Course	Year	Grade (A,B,C)
_____	19___	_____
_____	19___	_____
_____	19___	_____
_____	19___	_____
COLLEGE		
_____	19___	_____
_____	19___	_____
_____	19___	_____

What is your major? _____

Check your reason for taking Math:

- /__/ My major requires math
- /__/ I'm in a science related field
- /__/ I need math credit for transfer or graduation
- /__/ For self-improvement
- /__/ Other _____

Enrollment Card (back side)

00020

POSTCARDS AND LETTERS

You are not registered in Math_____.

☐ Please complete your registration in Bldg. 2.

☐ According to our records you are not attending the Math Lab.

☐ Please attend the Math Lab to complete your orientation and enrollment card. You are not officially enrolled until this is done.

A card sent to all no-shows at the beginning of the quarter.

According to our records you have completed _____lab hours and _____tests out of _____ for Math_____.

YOU ARE IN DANGER OF BEING WITHDRAWN FROM THIS COURSE UNLESS YOU MEET THE MINIMUM REQUIREMENT AS LISTED IN YOUR INSTRUCTIONS BY _____.

Please come to the lab and talk to one of the instructors.
We can help you if you are having trouble.
Your continued progress depends on this!!!

A warning card sent during the third week of the quarter.

TACOMA COMMUNITY COLLEGE

5900 South 12th Street

Tacoma, Washington 98465

Dear Student:

Learning mathematics on an individual-tutorial basis has certain advantages. Among these are the following: you may proceed at your own learning rate, you may take tests only when you are ready, you may do most of your studying at home, and you have plenty of help when you come to the lab. Unfortunately there is one big drawback. There is a heavy tendency on the student's part to procrastinate.

According to our records, you have not met the minimum progress requirements for the first four weeks. You may have a legitimate excuse for this lack of progress, nevertheless, we have to give you a failing grade up to this point in the quarter.

We need to know what your plans are for this course, so please contact one of the lab instructors within one week's time. It's not too late to rescue the course and get a passing grade by the end of the quarter.

If you are taking more than one course in the math lab or if you are finishing a course from last quarter, please come in to the math lab to make sure that this information has been recorded on each math lab enrollment card that you filled out for this quarter.

We are expecting good success from you in the math lab this quarter. This letter means that we care!

Sincerely,

Richard Spangler

Richard Spangler
Department of Mathematics

00022

According to our records you have completed _____ lab hours and _____ tests out of _____ for Math _____. If you plan to complete this course in one quarter, you should be finished with test _____.

If you persist at your present rate, you will be withdrawn by the end of the quarter.
Try to finish the course or earn an incomplete grade.

Please come to the lab and talk to one of the instructures.
We can help you if you're having trouble.
Your continued progress depends on this!

There are _____ weeks left in this quarter.

This card is sent during the fourth week of the quarter

According to my records you have completed _____ lab hours and _____ tests out of _____ for Math ____. If you plan to complete this course in one quarter, you should be finished with test _____.

If you plan not to complete this course, you need to finish at least _____ more tests and_____ more lab hours to receive a complete grade this quarter.
You need not to be concerned about the hour requirement if you complete the course this quarter.

There are _____ weeks left in this quarter.

Please come to the lab and talk to one of the instructors.
We can help you if you're having trouble.
Your continued progress depends on this!

This card is sent twice during the quarter to students in danger of not earning an incomplete.

Congratulations!

You have just completed the required hours for an incomplete grade should you choose not to finish the course by the end of this quarter.

Because of this, you do not have to sign into the Math Lab any longer.

You do need at least _____ more tests to receive an incomplete grade, however.

Your continued attendance is very important for your progress.

Keep up the good work!

This card is sent to students who have completed the hourly attendance requirement for an incomplete grade.

Dear Math Lab Student,

This card is being sent to everyone as a check against your records and ours.

Last day Math Lab is open this quarter: December 11, 1975

☐ Congratulations! You are on schedule. Keep up the good work! Plan now to complete this course before the last week.

☐ According to our records you have completed ____ tests out of ____ for Math ____. At your present rate you likely will receive an incomplete grade, but you have an excellent chance to finish the course by the end of the quarter if you try hard enough. You do need ____ more lab hours and _____ more tests for an incomplete grade if you do not finish.
If you complete the course this quarter, no lab hours are necessary.

☐ You are in danger of being withdrawn because you are not fulfilling the minimum progress requirements for Math ____. Please see an instructor by _____.

This card is sent to all students during the seventh week of the quarter.

Dear Student:

You received an incomplete grade last _____ quarter, _____, in Math _____, and according to my records you have _____ more tests to take to finish the course.

THIS IS YOUR LAST QUARTER!

You must complete your course this quarter unless you make a special agreement to extend the time with one of the instructors.

Do not lose these credits!

You do not have to be enrolled at TCC in order to complete this course.

Telephone calls are made to the remaining incompletes two weeks before the end of the quarter.

Completions

On completing a course, a student is sent a letter of congratulations:

Mr. John Doe
1234 16th S.
Tacoma, Wash.

Dear Mr. Doe:

Congratulations to you as you have completed Math 86 with a grade of A.

You are to be commended for your persistence and ambition!

My hope is that the facilities of the math lab will continue to help you progress in math successfully.

Please feel free to come in so that we may further assist you.

TACOMA COMMUNITY COLLEGE

5900 South 12th Street

Tacoma, Washington 98465

Dear Student:

The incomplete grade you received in your math course last quarter indicates persistence and an interest in mathematics. May I encourage you to press on to the last objective.

In order to complete your course, all you need to do is drop into the math lab to take the rest of the tests. You do not have to sign into the lab any longer. Unless you have a valid excuse, you must finish this course during the next quarter or you will be withdrawn. Be sure to see one of the instructors if you wish to extend your time beyond the second quarter.

If you are in a course that is also taught in the classroom, you may make arrangements to complete your course with another instructor in a regular classroom any scheduled time during this next quarter. Please see me for further details.

Best of luck.

Sincerely,

Richard Spangler

Richard Spangler
Department of Mathematics

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THIS IS THE FINAL NOTICE OF THE QUARTER!

According to our records you have completed _____ lab and _____ tests out of _____ for Math _____.

If you plan not to complete the course, you need to finish at least _____ more tests and _____ more lab hours to receive an incomplete grade this quarter. You need not be concerned about the hour requirement if you complete the course this quarter.

There are _____ weeks left in this quarter.

Hopefully you are planning to complete the course by _____. If not, try to earn an incomplete grade.

This card is sent two weeks before the end of the quarter to all students in danger of not earning an incomplete grade.

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